

and at least one electric arc, in which process, during welding of the joint, shielding at least one part of a welding zone comprising at least one part of said welded joint during welding with at least one shielding atmosphere formed by a gas mixture consisting of:

- argon and/or helium with a content greater than or equal to 70% by volume; and

- at least one additional compound chosen from H₂, O₂, CO₂ and N₂ with a content of 0 to 30% by volume, and

wherein the at least one electric arc is generated by a non-consumable electrode.--

--2. (amended) The welding process as claimed in claim 1, wherein the content of at least one additional compound chosen from H₂, O₂, CO₂ and N₂ is non zero and less than or equal to 20% by volume.--

--3. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of argon with a content greater than or equal to 70% by volume and of at least one additional compound chosen from H₂, O₂, CO₂ and N₂ with a content of 0.1 to 30% by volume.--

133 --4. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of argon with a content greater than or equal to 70% by volume and of 0.1 to 30% by volume of several additional compounds chosen from H₂, O₂, CO₂ and N₂.--

--5. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of helium with a content greater than or equal to 70% by volume and of at least one additional compound chosen from H₂, O₂, CO₂ and N₂ with a content of 0.1 to 30% by volume.--

--6. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of helium with a content greater than or equal to 70% by volume and of 0.1 to 30% by volume of several additional compounds chosen from H₂, O₂, CO₂ and N₂.--

Sub (3) --7. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of at least 70% by volume

of helium and argon and of 0.1 to 30% by volume of at least one additional compound chosen from H₂, O₂, CO₂ and N₂.--

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--8. (twice amended) The welding process as claimed in claim 1, wherein the workpiece or workpieces to be welded are made of a metal or a metal alloy chosen from coated or uncoated steels, aluminum or aluminum alloys.--

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--9. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of at least 70% by volume of helium and/or argon and of 0.1 to 30% by volume of at least one additional compound chosen from O₂ and CO₂ and wherein the workpiece or workpieces to be welded are made of steel.--

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--11. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of at least 90% by volume of helium or of argon and of 0.1 to 10% by volume of at least one additional compound chosen from O₂ and CO₂, and wherein the workpiece or workpieces to be welded are made of aluminum.--

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--12. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of at least 85% by volume of helium or of argon and of 0.1 to 15% by volume of H₂, and wherein the workpiece or workpieces to be welded are made of stainless steel.--

--13. (twice amended) The welding process as claimed in claim 1, wherein the shielding atmosphere is formed by a gas mixture consisting of at least 70% by volume of helium and/or argon and of 0.1 to 30% by volume of N₂, and wherein the workpiece or workpieces to be welded are made of steel.--

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--16. (twice amended) The welding process as claimed in claim 1, wherein the electric arc is delivered by a plasma-arc torch.--

CANCEL claim 17. ✓

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--18. (twice amended) The welding process as claimed in claim 1, wherein said metal workpiece comprises at least one tailored blank intended to constitute at least one part of a vehicle body element.--